

REMARKS

Reconsideration of this application as amended is respectfully requested.

In the Office Action, claims 1-52 are pending and rejected. In this response, claims 40 and 47 have been canceled without prejudice. Claims 1, 15, 21, 30, 39, 41, 43, 46, and 48 have been amended. No new matter has been added.

The drawings are objected to as failing to comply with 37 C.F.R. 1.84(p) because the numbers and letters are too small. Formal drawings will be submitted when the present application is in condition of allowance.

The Examiner has rejected claims 1, 21 and 39 because of informalities. The Examiner has rejected claims 2-3 and 9-13 under 35 U.S.C. §112, second paragraph. In view of the foregoing amendment, it is respectfully submitted that the above objections and rejections have been overcome.

Specifically, with respect to claims 6 and 9, claim 6 is related if an existing protection path is found that is not shared by another working path having the same priority, the existing protection path will be allocated. Claim 9 is related to in the case that the existing protection path cannot be found, a new protection path is allocated. It is respectfully submitted that these limitations are definite.

Claims 1-12 and 21-38 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,587,235 B1 to Chaudhuri, et al. ("Chaudhuri '235 patent"), in view of U.S. Patent Publication No. 2004/0120705 A1 to Friskney, et al. ("Friskney"). In view of the foregoing amendment, it is respectfully submitted that the present invention as claimed is patentable over the cited references.

Specifically, for example, independent claim 1 as amended recites as follows:

1. A method performed in an access node of a wavelength division multiplexing optical network, the method comprising:
 - receiving a demand for allocating a protection path that meets a set of disjointness constraints with respect to a working path, the protection path suitable to be shared with one or more other working paths, each of the working paths associated with a priority for obtaining the shared protection path; and
 - in response to the demand, selecting a protection path that meets the set of disjointness constraints with respect to the working path and has not been shared with another working path having the same priority as the working path associated with the protection path in demand, wherein the selected protection path is selected from a plurality of protection paths and wherein each of the protection paths is shared by no more than one working path having the same priority.

(Emphasis added)

Independent claim 1 requires limitations in which each of the working paths is associated with a priority which is used to obtain a protection path to be allocated from a pool of protection paths. Each of the protection paths can only be shared with working paths having different priorities and no more than one working path having the same priority will share the same protection path. It is respectfully submitted that these limitations are absent from the cited references.

Although Chaudhuri '235 patent discloses providing restoration channels (R channels) to be used by multiple working channels (SP channels and S channels), there is no disclosure within the Chaudhuri '235 patent that an R channel can only be shared by multiple working channels having different priorities.

The Office Action contended that "Chaudhuri et al. teaches in FIG. 5 a shared protection scheme where traffics are assigned different priorities. Chaudhuri et al. teaches not to share protection with another working path having the same priority." See, e.g., page 4 of 4/10/2007 Office Action (emphasis added). Applicant respectfully disagrees.

It is respectfully submitted that FIG. 5 of Chaudhuri '235 patent only shows that there

are multiple SP, S, and R channels, where the R channels provide protection to SP and S channels. Specifically, Chaudhuri '235 patent states:

As shown in FIGS. 5 and 6 and the accompanying legends, each line, interconnected to the optical layer cross-connect switch at each node, carries multiple channel groups using the DWDMs. These channel groups preferably include super premium channels (SP), standard channels (S), and restoration channels (R). Both SP and S channels are traffic-carrying (revenue generating) channels carrying high-speed traffic (e.g., OC-48, OC-192) within the system which are protected and restored against failures using the R channels. R channels are channels of equivalent capacity to SP and S channels that are used to restore communication services carried by SP and S in response to failures in these channels. These failures include, but are not limited to single channel failures, optical amplifier failures, transmitter and receiver failures, interface port failures, and fiber cuts occurring on the optical fiber channel connection between nodes. Also, R channels carry communication services that can be preempted in response to a SP or S channel failure.

(Chaudhuri '235 patent, col. 5, line 61 – col. 6, line 11, emphasis added).

Thus, similar to conventional optical network configurations, it appears that R channels are shared by any of the SP and S channels in the Chaudhuri '235 patent. There is no disclosure or suggestion within the cited section of the Chaudhuri '235 patent that a protection path can only be shared by working paths having different priorities as required by claim 1 of the present application.

Although the Chaudhuri '235 patent and the present invention as claimed are solving similar problems; however, it is the "how" that distinguishes the present invention as claimed from the Chaudhuri '235 patent. There is an advantage to have a protection path to be shared only by the working paths having different priorities. If more two working paths compete for the same protection path, since no more than one working path having the same priority can share the same protection path, the working path having a higher priority will win. If there were more than one working paths having the same priority to compete for the same protection path, there will be a deadlock.

Therefore, in view of the foregoing reasons, it is respectfully submitted that

independent claim 1 is patentable over the cited references. Similarly, independent claims 15, 21, 30, 39, and 46 as amended include limitations similar to those discussed above. Thus, for reasons similar to those discussed above, it is respectfully submitted that independent claims 15, 21, 30, 39, and 46 are patentable over the cited references. Given that the rest of the claims depend from one of the above independent claims, it is respectfully submitted that the rest of the claims are also patentable over the cited references.

Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Chaudhuri '235 and Friskney as applied to claims 1-13 and 21-38 above, and further in view of U.S. Patent Publication No. 2004/0218525 A1 to Elie-Dit-Cosaque, et al. ("Elie-Dit-Cosaque"). Claims 39-40, 43-47 and 50-52 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Chaudhuri '235 patent and Friskney as applied to claims 1-13 and 21-38 above, and further in view of U.S. Patent No. 6,130,876 to Chaudhuri ("Chaudhuri '876 patent"). Claims 41-42 and 48-49 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Chaudhuri '235 patent and Friskney and Chaudhuri '876 patent, as applied to claims 39-40, 43-47 and 50-52 above, and further in view of Elie-Dit-Cosaque.

It is respectfully submitted that none of these cited references discloses or suggests the limitations set forth above, where a protection path can only be shared by multiple working paths each having different priority.

In addition, with respect to claims 6-13, these claims are related to specific ways to maintain information such as priorities and number of protection paths sharing the same protection path in a database for the purposes of ensuring that no more than one working path having the same priority to share the same protection path.

The Office Action contended that FIG. 4 of Friskney teaches most of these limitations as recited in claims 6-13 (see e.g., 4/10/2007 Office Action, page 4). Applicant respectfully

disagrees. FIG. 4 of Friskney merely discloses general steps to allocate a restoration path and there is no disclosure or suggestion for the limitations set forth above (see e.g., Fig. 4 of Friskney).

In order to render a claim obvious, each and every limitations of the claim must be taught by the cited references, individually or in combination. It is respectfully submitted that the cited references, individually or in combination, fail to disclose or suggest the limitations set forth above. Therefore, it is respectfully submitted that the present invention as claimed is patentable over the cited references. Withdrawal of the rejections is respectfully requested.

In view of the foregoing, Applicant respectfully submits the present application is now in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call the undersigned attorney at (408) 720-8300.

Please charge Deposit Account No. 02-2666 for any shortage of fees in connection with this response.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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